

Preliminary Investigation Check List

| PP                       | PI Title   | PSC          | Customer Rep                 | PM                       | Investigator             | Priority  | Status    | Kickoff Meeting | Close-out Meeting | PI Results  |
|--------------------------|--|--------------|------------------------------|--------------------------|--------------------------|-----------|-----------|-----------------|-------------------|---|
| PI -District-1           | Construction, Maintenance, and Long Term Impacts to Old Growth Conifers Abutting Highways                    | D-1          | Deborah Harmon               | Harold Hunt              | CTC                      | Completed | Completed | 9/1/11          | 11/9/11           | Satisfied with PI. PI was not posted on DRI's website because of the legal ramification in California on this topic. website                            |
| PI-District-4            | The Relationship between Corner Curb Radius and Injury Severity at Locations with Pedestrian Crossings       | D-4          | Beth Thomas                  | Bob Justice              | Tech Transfer Librarians | Completed | Completed | 12/12/11        | 3/22/12           | PI submitted as NCHRP candidate FY2013  |
| PI-District-1            | Traffic Noise Generated by Rumble Strips   | D-1          | Dana York                    | Joel Retanan             | CTC                      | Completed | Completed | 1/20/12         | 4/17/12           | Satisfied with PI-research project  |
| PI-District-North Region | Cured In Place Pipes (CIPP) and Thermoplastic Resin(s) Toxicity Impacts to Receiving Waters                  | North Region | David Melendrez/Sean Penders | Tam Nguyen / Fred Yazdan | CTC                      | Completed | Completed | 3/16/12         | 12/3/12           | Satisfied with PI-next phase -PM (Fred Yazdan) will lead panel forth in new research project for FY 13/14.  |
| PI-District-12           | Automated Video Incident Detection System  | D-12         | Mort Fahrash                 | Fred Yazdan              | CTC                      | Completed | Completed | 6/21/12         | 11/14/12          | Next phase –PM (Fred Yazdan) will lead Panel in contacting Mass DOT, and proposing a new research project (Pilot project in D-7 and D-12) for FY 13/14. |
| PI-District-11           | Optimum Amount of Money/Resources for Public Outreach During a Major Planned Closure                         | D-11         | Laurie Berman                | Melissa Clark            | Melissa Clark            | Completed | Completed |                 | 11/23/15          | The project manager stated District 10 appeared to be satisfied with the final report no feedback was received.   |
| PI-District-5            | Forecasting Habitat Changes in the Scott Creek Estuary Due to Replacing the Bridge on SR 1 (Bridge # 360031) | D-5          | Brandy Rider                 | Harold Hunt              | CTC                      | Completed | Completed | 7/9/14          | 1/13/15           | The final report was shared with Public Affairs in District 5. The panel is considering going forward with a research project.                          |

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| PI-District-6  | Safety and Viability of Bicycle Facilities in the San Joaquin Valley                                       | D-6                      | Joanne Striebich  | Harold Hunt   | CTC          | On-Hold   | On-Hold   |                 |                   |   |
| PI-District12  | Study on the use of 3rd-party GPS data for Mobility Performance Report (MPR) and Bottleneck Identification | Transp Safety & Mobility | Farid Nowshiravan | John Slonaker | CTC          | On-Hold   | On-Hold   | 3/15/13         |                   |   |
| PI-0909-DC     | Green Infrastructure - Guidelines to Implement Climate Change Adaptation Strategies in Highway Roadsides   | Division of Design       | Keith Robinson    | Harold Hunt   | CTC          | Completed | Completed |                 | 2/11/10           | Satisfied with PI                           |
| PI-0951-DC     | Tree Safety  | Division of Design       | Keith Robinson    | Harold Hunt   | CTC          | Completed | Completed |                 | 4/1/10            | Satisfied with PI                           |
| PI-0919-Design | Roadside Management Strategies to Reduce Greenhouse Gases  | Division of Design       | Keith Robinson    | Doug Brown    | CTC          | Completed | Completed | 5/18/10         | 7/6/10            | Satisfied with PI                           |
| PI-5911-Design | Consultant vs. Staff Cost Comparison (1)   | Division of Design       | Said Ismail       | Kamal Sah     | CTC          | Completed | Completed | 5/1/11          | 7/16/12           | Satisfied with PI                           |
| PI-6111-Design | Consultant vs. Staff Cost Comparison (2)   | Division of Design       | Said Ismail       | Kamal Sah     | CTC          | Completed | Completed | 8/1/11          | 10/1/11           | Satisfied with PI                           |
| PI-0111-Design | Effectiveness of Traffic Calming Techniques  | Division of Design       | Doug Brown        | Harold Hunt   | CTC          | Completed | Completed | 3/28/11         | 11/16/11          | Satisfied with PI-possible research project |
| PI-0212-Design | Partnering Benchmark Study   | Division of Design       | Mark Leja         | Roya Hassas   | CTC          | Completed | Completed | 1/3/12          | 4/11/12           | Satisfied with PI possible research project |

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| PI-0312-Design | Enhanced Constructability Review (1)                                    | Division of Design | Terry Abbott/ Tim Craggs/ Mark Leja/ Mark Turner                            | Kamal Sah     | CTC          | Completed | Completed | 12/19/11        | 3/12/12           | Satisfied with PI possible research project  |
| PI-1112-Design | Enhanced Constructability Review (2)                                    | Division of Design | Homar Noroozi, Juan Araya, Jesus Mora ,Mark Turner, Chuck Suszko, Jim Cotey | Haniel Chung  | CTC          | Completed | Completed | 9/25/13         | 9/10/14           | Panel will request DRISI Communication to do a Research Connection Work shop for the PI topic.   |
| PI-0212-Design | Effects of Digital Outdoor Advertising Displays on Driver Safety        | Division of Design | Doug Brown  | Roya Hassas   | CTC          | Completed | Completed | 6/6/12          | 11/14/12          | PI Panel agreed to change the word “safety” to “driver behavior” in many cases throughout the PI report. Customer will send email with scope for possible research project through DRI or NCHRP.   |
| PI-0102-Design | Low Profile Barrier Alternatives  | Division of Design | Doug Brown  | Fred Yazdan   | CTC          | Completed | Completed | 2/4/13          | 8/22/13           | John Jewel's office will prepare a memo to be signed by Randy Hiatt requesting FHWA approval to use Washington DOT's 20 inch low profile barriers with backfill without testing. If the request is not approved might consider further research. |
| PI-0212-Design | The State of the Practice of Transportation Landscape Architects (P956) | Division of Design | Jennifer Taira  | Gloria Gwynne | CTC          | Completed | Completed | 7/7/14          | 11/10/14          | CTC delivered the final the draft report on Roles of Landscape Architects on 11/10/14. Panel made a few revision. Once revision are made report will be closed out.  |

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| PI-0314-Design | Cycle Track  | Division of Design | Kevin Herritt  | Gloria Gwynne  |              | Completed        | Completed        | 1/5/15          | 7/20/15           | Design will share the findings with Traffic Opertation to develop a cycle track guideline.                                  |
| PI-1205-Design | Highway soil compaction and safety for storm water treatment BMPs. | Division of Design | Sean Penders PE, Ray Tritt   | Sukhdeep Nagra | CTC          | Completed        | Completed        | 4/12/15         | 8/20/15           | Satisfied with PI-Will proceed forth with a research project.   |
| PI-0615-Design | Identifying Best Practices for Evaluation of Design Innovations    | Division of Design | Janice Benton and Ray Tritt  | Sukhdeep Nagra | CTC          | Completed        | Completed        | 6/1/14          | 7/1/15            | Satisfied with PI   |
| PI-0214-Design | Corrugated Steel Culvert Corrosion & Abrasion Performance          | Division of Design | Glenn DeCou, Paul Davies , Leo Martinez                                | Sukhdeep Nagra |              | No longer needed | No longer needed |                 |                   | PI is no longer needed the Caltrans in-house Pilot Study for this same project which concluded further research was needed. |
| PI-0935-Design | Analyzing Risk Assessment for Worker Safety.                       | Division of Design | Jennifer Taira,Dawn Grinstain,Duper Tong, Theresa Drum, Jack Broadbent | Gloria Gwynne  | CTC          | In-progress      | In-progress      | 11/9/15         |                   |   |

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| PI-0103-Design       | Sustainable Solutions by Establishing Native Plants, Long-Term Success Rates & Cost/Benefits of Specific Planting | Division of Design       | Jennifer Taira  | Harold Hunt         |              | 1                | In-queue         |                 |                   |  |
| PI-0104-Design       | Performance Measures for Roadside Vegetation  | Division of Design       | Jennifer Taira  |                     |              | 2                | In-queue         |                 |                   |  |
| PI-0928-Design       | Green Buildings   | Division of Design       | Jennifer Taira  | Doug Brown          | Student      | No longer needed | No longer needed | 6/1/10          |                   |  |
| PI-0715-Construction | Cost-Benefit Analysis for the Use of Automatic Machine Guidance in Construction                                   | Division of Construction | Ken Darby   | David Lim           | CTC          | Completed        | Completed        | 5/7/15          |                   | CTC delivered the final report. I will schedule the next/step close out meeting. |
| PI-0815-Construction | Cost effectiveness of closing additional traffic lane(s) adjacent to the work area                                | Division of Construction | Celso Izquierdo, Chuck Suszko, Michael Samadian                   | Joe Horton          | CTC          | In-progress      | In-progress      |                 |                   |  |
| PI-1115-Construction | Construction Safety Coordinator   | Division of Construction | Samir Ead,Randy Hiatt, Chuck Suszko, Celso Izquierdo,Ed Yarbrough | John Jewell         | CTC          | In-progress      | In-progress      | 11/5/15         |                   | CTC provided the planned scope on 11/23/2015.                                    |
| PI-0803-DRISI        | Real-Time Data to Improve En Route Decision Making and Reduce Transportation Demand (NCHRP Candidate)             | DRISI                    | Sheila Chowdury/ Thomas Schriber                                  | Hassan Aboukhadijeh | CTC          | Pilot            | Completed        | --              | 7/1/09            | NCHRP Success  |
| PI-0211-DRISI        | State DOTs and how they implement research results  | DRISI                    | Rebecca Boyer   | Rebecca Boyer       | CTC          | Completed        | Completed        | 2/11/11         | 4/1/11            | Satisfied with PI results used for March 2011 Peer Exchange                      |
| PI-0901-DRISI        | Intellectual Property: National and International Perspectives  | DRISI                    | Larry Orcutt  |                     | CTC          | Completed        | Completed        |                 | 6/1/10            | Satisfied with PI  |

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| PI-0812-DRISI | Application of Cross-Asset Optimization in Transportation Asset Management: A Survey of State Practice and Related Research. | DRISI | Steve Guenther   | K Scott Williams | CTC          | Completed        | Completed        | 1/13/12         | 8/23/12           | PI results were used to develop white paper for Executive Board.   |
| PI-0113-DRISI | Alternative Transportation Financing Strategies  | DRISI | Debra Prichard,Nizar Melehani,Pam Korte,Barry Padilla,Rahul Srivastava,Nancy Chinlund, Nicole Longoria, Norma Ortega, Kome Ajise, Coco Briseno | K Scott Williams | CTC          | Completed        | Completed        | 12/19/12        | 2/4/13            | Customers were pleased with the PI, and may be requesting a future follow-on PI to dig down into the more progressive states to ask questions about their implementation costs and strategies. |
| PI-0902-DRISI | Intellectual Property: California  | DRISI |  |                  |              | No longer needed | No longer needed |                 |                   |  |
| PI-1112-DRISI | Impacts of Increasing Vehicle-Occupancy Requirements on HOV/HOT Lanes  | DRISI | Joseph Rouse   | Fred Yazdan      | CTC          | Completed        | Completed        | 12/20/12        | 4/15/13           | CTC delivered the PI and case studies on 4/5/13. Satisfied with PI.  |
| PI-1112-DRISI | Geospatial Highway Inventory and Traffic Safety Application  | DRISI | Mark Samuelson   | Mandy Chu        | CTC          | Completed        | Completed        | 7/19/13         | 11/19/13          | Satisfied with PI  |
| PI-12016-DRIS | Tools for Measuring the Impact of Active Transportation on VMT   | DRISI | Darwin Moosavi   | Lauren Iacobucci | CTC          | 1                | In-queue         |                 |                   |  |
| PI-0725-DRISI | Models of Project Delivery Workforce Development in Transportation   | DRISI | Said Ismail  | TBD              | CTC          | In-progress      | In-progress      | 7/31/15         |                   | CTC will delivered the draft report 12/1/15.   |
| PI-0715-DRISI | Resiliency Strategies for Transportation Systems   | DRISI | Nick Burmas  | Nick Burmas      | CTC          | In-progress      | In-progress      | 8/20/15         |                   | CTC delivered the final draft report on 11//29/15.   |

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| PI-1215-DRISI | Quantifying Passenger Rail Access Mode Shift   | DRISI         | Brian Stanke              |             | CTC                      | In-progress | In-progress | 1/27/16         |                   |   |
| PI-1210-EV    | Environmentally Friendly Elimination of Moss Pavement Enhance Safety                       | Environmental | Deborah Harmon            | Harold Hunt | CTC                      | Completed   | Completed   | 2/8/11          | 4/25/11           | Satisfied with PI-possible research project   |
| PI-1015-EV    | Cultural Resources Public Outreach   | Environmental | Glenn Gmoser              | Harold Hunt | CTC                      | Completed   | Completed   | 10/28/10        | 2/18/11           | Satisfied with PI-PI submit as a candidate for the Synthesis FY 2013  |
| PI-0711-EV    | Use of Cool Pavements to Reduce Energy Use and Mitigate Greenhouse Gas Emissions           | Environmental | Bruce Rymer               | Harold Hunt | Tech Transfer Librarians | Completed   | Completed   | 6/8/11          | 11/15/11          | Satisfied with PI results used at an environmental conference   |
| PI-0701-EV    | Comparative Life Cycle Costs of Culverts That Provide Unimpeded Fish and Wildlife Movement | Environmental | Amy Pettler/ Richard Hill | Harold Hunt | CTC                      | Completed   | Completed   | 9/13/12         | 3/20/12           | Satisfied with PI-possible research project   |
| PI-0812-EV    | Promoting the Ability of Sensitive Reptiles and Amphibians to Cross Highway Corridors (1)  | Environmental | Margaret Gabil            | Harold Hunt | CTC                      | Completed   | Completed   | 8/24/12         | 12/4/12           | Panel wants to pursue a follow-on PI, on California species' life history and habitat requirements. With Kendra Levine, at UC Berkeley Library. |
| PI-0313-EV    | Promoting the Ability of Sensitive Reptiles and Amphibians to Cross Highway Corridors (2)  | Environmental | Amy Pettler/ Richard Hill | Harold Hunt | Tech Transfer Librarians | Completed   | Completed   | 4/3/13          | 11/7/13           | Next step research project Harold Hunt will contact the Fish & Wildlife and USGS for a list of their interest and pressing issue on this topic. |

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| PI-0214-EV | Improved Exclusion Barriers for Desert Tortoises   | Environmental | Kyle Myrick, Amy Golden, Scott Quinnell                        | Harold Hunt | DRISI (In House PI) | Completed   | Completed   | 4/3/14          | 6/25/14           | Panel wants to develop an Official Design Drawing (engineering system). Harold Hunt and Amy Golden (Env) develop the design plans.  |
| PI-0614-EV | Fencing and One-Way Gates to Reduce Wildlife-Vehicle Collisions for Small and Medium Sized Animals   | Environmental | Celina Oliveri   | Harold Hunt | CTC                 | Completed   | Completed   | 6/11/14         | 10/9/14           | Waiting for the NCHRP Project 25-25, Task 84 re: SR 23 PI report to be completed to determine to do a pool fund or research project |
| PI-0723-EV | Monitoring the Endangered tidewater goby using environmental DNA in water samples                    | Environmental | Amy Golden, Susan Leroy  | Harold Hunt | CTC                 | Completed   | Completed   | 11/21/14        | 3/3/15            | Satisfied with PI findings. Will proceed forth with research project.   |
| PI-0116-EV | Determining the Appropriate Amount of Time to Isolate Portland Cement Concrete from Receiving Waters | Environmental | Amy Golden, Margaret Lawrence                                  | Harold Hunt | CTC                 | Completed   | Completed   | 7/15/15         | 2/16/16           | Findings from PI report was provided to California Department of Fish and Wildlife  |
| PI-1215-EV | Tide Gate Hydraulic Analysis   | Environmental | Bruce Swanger, Melinda Molnar, Amy Golden                      | Harold Hunt | CTC                 | In-progress | In-progress | 1/16/16         |                   | CTC delivered the final draft report on 3/4/16. Waiting for feedback from panel.  |
| PI-1115-EV | California Tiger Salamander Landscape Genetics   | Environmental | Amy Bailey, Jim Henke, Amy Golden, Nancy Siepel, Paul Andreano | Harold Hunt | CTC                 | 1           | In-queue    |                 |                   |   |
| PI-0923-EV | Statewide Cultural Property Information System   | Environmental | Glenn Gmoser   |             |                     | 2           | In-queue    |                 |                   |   |
| PI-0932-EV | Best Practices for Native American Consultation and Coordination.                                    | Environmental | Glenn Gmoser   |             |                     | 3           | In-queue    |                 |                   |   |
| PI-0939-EV | Geoarchaeological Sensitivity Modeling   | Environmental | Glenn Gmoser   |             |                     | 4           | In-queue    |                 |                   |   |



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| PI-0943-EV | Cost Effective and Innovative Mitigation Practices                                 | Environmental       | Glenn Gmoser            |          |              | 5                | In-queue         |                 |                   |                      |
| PI-0946-EV | Practical Applications of Remote Sensing   | Environmental       | Glenn Gmoser            |          |              | 6                | In-queue         |                 |                   |                      |
| PI-0949-EV | Research Contexts for Archaeology and History                                      | Environmental       | Glenn Gmoser            |          |              | 7                | In-queue         |                 |                   |                      |
| PI-1014-EV | Joshua Trees (Yucca Brevifolia) and Highway Safety                                 | Environmental       | Paul Caron              |          |              | No longer needed | No longer needed | 6/8/10          |                   |                      |
| PI-0947-GS | 'Local' with 'Global' NDT Methods to Assess Capacity of PT Box-Girder Structures   | Geotech/ Structural | Charles Sikorsky        |          |              | No longer needed | No longer needed |                 |                   |                      |
| PI-0913-GS | Evaluate Premixed Polyester Concrete as Wearing Surface on Orthotropic Steel Decks | Geotech/ Structural | Mike Keever/ Paul Chung |          |              | No longer needed | No longer needed |                 |                   |                      |
| PI-0933-GS | Improved LRFD & LRFR Specifications for Permit & Fatigue Truck Loads               | Geotech/ Structural | Sue Hida                | Sue Hida | CTC          | Completed        | Completed        | 11/2/09         | 1/10/10           | DRI Research Project |

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| PI-0940-GS  | Geophysical Methods for Geotechnical Site Characterization  | Geotech/ Structural   | Mark Willian  | Bill Owen        | Bill Owen       | Completed | Completed |                 | 3/29/10           | Satisfied with PI   |
| PI-1011-GS  | Steel Girder End Panel Shear Resistance   | Geotech/ Structural   | Lian Duan   | Charles Sikorsky | Charles Siorsky | Completed | Completed | 10/28/10        | 10/28/10          |   |
| PI-0913-GS  | Unmanned Aerial Systems (UAS) for Steep Terrain Investigations  | Geotech/ Structural   | Ron Karpowicz, John Duffy, Craig Hannenian, Jim Morris, | Loren Turner     | CTC             | Completed | Completed | 5/27/14         | 9/8/14            | Panel will proceed forth with a research project and NCHRP process. |
| PI-0915-GS  | Development of a Validated Methodology for Seismic Analysis and Design of Standard & Pile Supported Retaining Walls | Geotech/ Structural   | Charles Sikorsky  | Nick Burmas      | Hamid Sadraie   | Completed | Completed |                 | 9/21/15           | Research project task ID: 2879                                      |
| PI-0928-GS  | Post-Tensioned Box Girder Deck Replacement Methodology  | Geotech/ Structural   | Charles Sikorsky  | Nick Burmas      | Hamid Sadraie   | Completed | Completed |                 | 9/28/15           | Research projectTask ID: 2781                                       |
| PI-09131-GS | Rockfall Internal Measurement Unit (RIMU) "SmartRock"   | Geotech/ Structural   | Bill Webster, Jim Duffy,Brian Hinman,Craig Hannenian,   | Loren Turner     |                 | Hold      | Hold      |                 |                   |   |
| PI-0944-GS  | Calibration of the CEB Equations for Shrinkage Prediction to Improve Bridge Designs                                 | Geotech/ Structural   | Mike Keever   | Peter S. Lee     |                 | 1         | In-queue  |                 |                   |   |
| PI-0924-GS  | Extending Service Life and Performance of Bridge Decks  | Geotech/ Structural   | Mike Keever/ Mike Johnson                               | Steve Sahs       |                 | 2         | In-queue  |                 |                   |   |
| PI-1111-DOE | Effective Management of DOT Equipment (1)   | Division of Equipment | Larry Orcutt  | Tori Kanzler     | CTC             | Completed | Completed |                 |                   | Satisfied with PI   |

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| PI-0113-DOE | Effective Management of DOT Equipment (2)  | Division of Equipment | Larry Orcutt                                    | Bob Meline       | CTC          | Completed | Completed | 2/5/13          | 4/21/13           | Follow on for Fleet Equipment is a peer exchange.   |
| PI-1111-DOE | GPS on Equipment   | Division of Equipment | Larry Orcutt                                    | Tori Kanzler     | CTC          | Completed | Completed | 12/16/11        | 12/16/11          | Research project and implementation   |
| PI-1112-DOE | Fleet Equipment Asset Management-Performance Measures                            | Division of Equipment | Larry Orcutt                                    | Bob Meline       | CTC          | Completed | Completed | 12/6/12         | 12/28/12          | PI submit as a candidate for NCHRP Synthesis FY 2013  |
| PI-0614-DOE | Equipment Production and Procurement Costs                                       | Division of Equipment | Kris Teague, Ed Giroux                          | Joe Horton       | CTC          | Completed | Completed | 5/16/14         | 6/24/14           | Satisfied with PI-  |
| PI-1114-DOE | Best Practices of Ways to Reduce Illness and Injury Rate in Heavy Duty Mechanics | Division of Equipment | Mike Tanner, Lisa Kunzman, Bob Myers, Dave Roth | Robert Buendia   | CTC          | Completed | Completed | 9/23/14         | 4/16/15           | CTC completed a survey of current best practices and delivered the final report on 2/9/2015 |
| PI-0315-DOE | Enhancing the Visibility of Caltrans Employees and Vehicles                      | Division of Equipment | Lisa Kunzman, Theresa Drum, Gordon Wang         | Joe Horton       | CTC          | 1         | In-queue  |                 |                   |   |
| PI-01111-MA | Life cycle cost principles for reducing maintenance costs and worker exposure    | Maintenance           | Mike Evans                                      | K Scott Williams | CTC          | Completed | Completed | 1/7/12          | 3/7/12            | PI results were used to meet with Executive staff.  |
| PI-07110-MA | Laws to deter the recycling of stolen metals                                     | Maintenance           | Steve Takigawa                                  | Pete Zanewski    | CTC          | Completed | Completed |                 |                   | Satisfied with PI-potential research project  |
| PI-07111-MA | Highway Safety Education and Outreach  | Maintenance           | Larry Orcutt                                    | Randy Woolley    | CTC          | Completed | Completed | 6/28/11         |                   | Finding were used as a Safety performance measure for Executive staff.                      |

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| PI-07112-MA | Highway Safety Policies and Legal Issues   | Maintenance | Larry Orcutt  | Randy Woolley       | CTC          | Completed | Completed                       | 6/28/11         |                   | Finding were used as a Safety performance measure for Executive staff.   |
| PI-07113-MA | Highway Safety Technologies  | Maintenance | Larry Orcutt  | Randy Woolley       | CTC          | Completed | Completed                       | 6/28/11         |                   | Finding were used as a Safety performance measure for Executive staff.   |
| PI-0908-MA  | Quick Clearance for Major Traffic Incidents  | Maintenance | Nader Eshghipour  | Mandy Chu           | CTC          | Completed | Completed                       | 9/21/09         | 3/8/10            | DRI Research Project   |
| PI-0812-MA  | Does crack sealing have negative effects on the coefficient of friction for single track vehicles such as motorcycles? | Maintenance | Peter Vacura/ Joe Peterson/ Chuck Suzko/ Craig Copeland | Joe Holland         | TBD          | On-Hold   | PSC has placed this PI on hold. | 6/12/12         |                   |  |
| PI-0712-MA  | Flood Warning Alert System   | Maintenance | Herby Lissade   | Bob Meline          | CTC          | Completed | Completed                       | 10/5/12         | 3/6/13            | Will do a 2-part project plan: 1. Six month feasibility study with cost-benefit analysis on the options of purchasing vs. developing a flood warning system. 2. Purchase a or do in house project. |
| PI-1113-MA  | Best design practices and products to deter copper wire theft.   | Maintenance | Gonzalo Gomez/Agustin Rosales                           | Hassan Aboukhadijeh | CTC          | Completed | Completed                       | 3/25/13         | 5/24/13           | PI findings supports the Wire Theft Prevention Task Team methodologies.  |
| PI-0714-MA  | Traction Device study  | Maintenance | David Frame   | Bob Meline          | CTC          | Completed | Completed                       | 5/27/14         | 8/22/14           | CTC delivered the final PI report on 7/21/14. PI results will be shared with CHP. This will possibly be a research project.  |

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| PI-0914-MA | Avalanche Mapping Study                 | Maintenance | David Frame  | Bob Meline  | AHMCT        | Completed | Completed |                 | 4/17/15           | AHMCT finished the PI for the Avalanche Mapping task(Task ID 2734). Maintenance was satisfied with the results. |
| PI-0914-MA | FIRECAST                                | Maintenance | Rene Garcia  | Joe Horton  | CTC          | Completed | Completed | 9/12/14         | 1/9/15            | Panel members discussed doing a Firecast study will work with Joe Horton and staff                              |
| PI-0213-MA | Variances in advanced warning signage   | Maintenance | Theresa Drum   | Joe Horton  | CTC          | Completed | Completed | 1/22/15         |                   | The report showed Caltrans is above the level of other states for use of signage, PCMS and MAZEPP in workzones, |
| PI-0715-MA | Wrong-Way Driving Prevention Methods    | Maintenance | Mike Hagen, Deb Larson, Brian Hadley, Jerry Champs,Prakash Sah, Great Larson Joe Horton            | Lai Saetern | CTC          | Completed | Completed | 6/23/15         |                   | Final report has been posted on DRISI web site  |
| PI-0215-MA | Highways Median Barrier                 | Maintenance | Duper Tong, Randy Hiatt, Thomas Schriber, Agustin Rosales, Gonzalo Gomez, Patti-Jo Dickinson       | Jerry Kwong | CTC          | Completed | Completed | 3/6/15          | 5/15/15           | Satisfied with PI   |
| PI-0515-MA | Strategies for Replacing Field Elements | Maintenance | Ferdinand Milanes, Takeshi Tokunaga, Jason Akbari, Michelle Alvarado, Augie Rosales, Gonzalo Gomez | Joe Horton  | CTC          | Completed | Completed | 6/26/15         | 1/8/16            | Satisfied with PI   |

## Preliminary Investigation Check List

| PP         | PI Title   | PSC         | Customer Rep  | PM             | Investigator | Priority         | Status           | Kickoff Meeting | Close-out Meeting | PI Results   |
|------------|--|-------------|---|----------------|--------------|------------------|------------------|-----------------|-------------------|--|
| PI-0914-MA | Automated Steering and control of paint striping machine                   | Maintenance | Gonzalo Gomez   | Joe Horton     | CTC          | No longer needed | No longer needed |                 |                   | Joe Horton stated in maintenance's pre PSC meeting the PI is no longer needed.                                       |
|            |  |             |   |                |              |                  |                  |                 |                   |  |
| PI-0114-MO | State Aeronautics Role in an Emergency Air Operations Branch               | Modal       | Derek Kantar, Herby Lissade,Terry Barrie, Patrick J Miles, Dan Reese, Phillip Miller, Chris Avina | Patrick Tyner  | CTC          | Completed        | Completed        | 3/16/14         | 10/1/14           | The PI helped to complete the rewrite of the Air Coordination Group Concept of Operations that's reviewed at Cal OES |
| PI-0314-MO | Demand Responsive Transit Operation Based on Dynamic Passenger Information | Modal       | Scott Sauer   | Bradley Mizuno | Lee Provost  | Completed        | Completed        | 4/1/14          | 4/15/14           | Satisfied with PI-possible research project  |
| PI-0920-MO | Transit Data and Planning Integration                                      | Modal       | Scott Sauer   | Bob Justice    | CTC          | Completed        | Completed        | 4/3/12          | 7/10/12           | To be addressed in a MTI research study beg Sept 2013, involving Traffic Ops, DMT, DOTP, and DIRSI"                  |
| PI-0936-MO | Assessing Park and Ride Impacts  | Modal       | Scott Sauer   | Bob Justice    | CTC          | Completed        | Completed        | 3/24/10         | 6/17/10           | TCRP Project   |
| PI-0903-MO | Disaster Recovery Planning   | Modal       | Colette Armao   | Dan Lovegren   | CTC          | Completed        | Completed        | 6/18/09         | 3/2/10            | DRI Research Project   |
| PI-0915-MO | Transit Oriented Development (TOD) Evaluations                             | Modal       | Jila Priebe   | Bob Justice    | Student      | No longer needed | No longer needed |                 |                   |  |
| PI-0929-MO | Passenger Locomotive Air Quality   | Modal       | Ken Galt  | Dan Lovegren   |              | No longer needed | No longer needed |                 |                   |  |
| PI-0910-PA | HMA Taper Specification/ Details   | Pavement    | Chris Cummings  | Joe Holland    | CTC          | Completed        | Completed        | 12/2/09         | 3/16/10           | TPF project  |

## Preliminary Investigation Check List

| PP           | PI Title  | PSC                          | Customer Rep                    | PM            | Investigator      | Priority         | Status           | Kickoff Meeting | Close-out Meeting | PI Results   |
|--------------|---|------------------------------|---------------------------------|---------------|-------------------|------------------|------------------|-----------------|-------------------|--|
| PI-0312-PA   | Recycled Concrete   | Pavement                     | Dan Speer/ Bill Farnbach        | Joe Holland   | CTC               | Completed        | Completed        | 3/13/12         | 10/1/12           | Satisfied with PI possible research project                    |
| PI-0315-PA   | Joint Training and Certification of Materials Testers   | Pavement                     | Joe Peterson                    | Joe Holland   | CTC               | Completed        | Completed        | 2/18/15         | 4/10/15           | Satisfied with PI report                                       |
| PI-0921-PA   | 20 Year Flexible Pavement Rehabilitation  | Pavement                     | Bill Farnbach                   |               |                   | No longer needed | No longer needed |                 |                   |  |
| PI-0930-PA   | Interlayer for Cracking Reduction   | Pavement                     | Bill Farnbach                   |               |                   | No longer needed | No longer needed |                 |                   |  |
| PI-0937-PA   | Automatic Asphalt Concrete Quantities Estimation  | Pavement                     | Terrie Bressette                |               |                   | No longer needed | No longer needed |                 |                   |  |
| PI-0942-PA   | Longer Lasting PCC Replacement Slabs  | Pavement                     | Kirsten Stahl                   |               |                   | No longer needed | No longer needed |                 |                   |  |
| PI-0953-PPSI | Comparison of California to other State's DOT's on Project Initiation Documents and Reimbursement Schemes | Policy/Planning/ Programming | Nathan Smith/ Marlon Flournoy   | Paul Moore    | CTC               | Completed        | Completed        | 8/10/10         | 1/11/11           | Satisfied with PI  |
| PI-1101-PPSI | Developing Air Quality Mitigation Measures for Projects' Operational Emissions                            | Policy/Planning/ Programming | David Ipps                      | Patrick Tyner | CTC               | Completed        | Completed        | 1/31/11         | 6/15/11           | Satisfied with PI-will request research project                |
| PI-0916-PPSI | California Best Practices for Rural and Tribal Smart Growth (1)   | Policy/Planning/ Programming | Marilee Mortenson/ Terry Parker | Bob Justice   | CTC               | Completed        | Completed        | 4/13/10         | 8/11/10           | Satisfied with PI  |
| PI-1003-PPSI | Inactive and Abandoned Rail Corridor Preservation Study   | Policy/Planning/ Programming | Todd LaCasse                    | Matt Hanson   | CTC               | Completed        | Completed        | 3/21/11         | 7/25/11           | Satisfied with PI  |
| PI-1112-PPSI | How Other Transportation Agencies Address Public Health Issues  | Policy/Planning/ Programming | Garth Hopkins                   | Bob Justice   | CTC               | Completed        | Completed        | 6/17/11         | 11/16/11          | PI submitted as background material for NCHRP research project |
| PI-1108-PPSI | Smart Mobility Performance Measurement Deployment (1)   | Policy/Planning/ Programming | Chris Ratekin                   | Bob Justice   | CTC               | Completed        | Completed        | 2/10/12         | 6/1/12            | Satisfied with PI-   |
| PI-0712-PPSI | Smart Mobility Performance Measurement Deployment (2)   | Policy/Planning/ Programming | Chris Ratekin                   | Bob Justice   | Tech Transfer Lit | Completed        | Completed        | 6/12/12         | 7/12/12           | Tech Transfer completed the final report                       |

Preliminary Investigation Check List

| PP           | PI Title   | PSC                         | Customer Rep   | PM            | Investigator             | Priority  | Status    | Kickoff Meeting | Close-out Meeting | PI Results  |
|--------------|--|-----------------------------|--|---------------|--------------------------|-----------|-----------|-----------------|-------------------|---|
| PI-0413-PPSI | Smart Mobility Performance Measurement Deployment (3)  | Policy/Planning/Programming | Chris Ratekin  | Bob Justice   | CTC                      | Completed | Completed | 3/21/13         | 4/2/13            | Sustainable Transportation—Smart Mobility was not selected for funding for the NCHRP Synthesis studies.   |
| PI-1111-PPSI | Best Practices for Environmental Consideration in Systems Planning Documents (1)   | Policy/Planning/Programming | Aileen Loe   | Bob Justice   | Tech Transfer Lib        | Completed | Completed |                 |                   | Tech Transfer completed the final report  |
| PI-1112-PPSI | Best Practices for Environmental Consideration in Systems Planning Documents (2)   | Policy/Planning/Programming | Aileen Loe   | Bob Justice   | CTC                      | Completed | Completed |                 |                   | PI submitted as background material for NCHRP research project  |
| PI-1109-PPSI | The influence of Transit on Highway Operations (1)   | Policy/Planning/Programming | Fredrick Schermer/Erik Alm   | Bob Justice   | Tech Transfer Librarians | Completed | Completed | 4/13/13         | 7/10/13           | Tech Transfer delivered updated report on 9/25/13.  |
| PI-0713-PPSI | The influence of Transit on Highway Operations (2)   | Policy/Planning/Programming | Fredrick Schermer/Erik Alm   | Bob Justice   | CTC                      | Completed | Completed | 7/22/13         | 11/1/13           | Satisfied with PI   |
| PI-0314-PPSI | Survey of Best Practices for Decreasing GHG Emissions Through System Management, Operational Improvements, and Pavement Condition. | Policy/Planning/Programming | Garth Hopkins, LaNae Van Valen, Rahul Srivastava, Julia Biggar, Joan Sollenberger, Nick Compin, Tom Pyle | Patrick Tyner | CTC                      | Completed | Completed | 7/2/14          | 10/2/14           | Satisfied with PI   |
| PI-1110-PPSI | Feasibility of Moving Freight on High-Speed Rail Networks  | Policy/Planning/Programming | Todd LaCasse/Joanne McDermott  | Patrick Tyner | CTC                      | Completed | Completed | 11/19/14        | 7/14/15           | CTC delivered the final PI on moving freight on high-speed rail, which incorporates the latest changes received from Joanne McDermott on 4/27/15. |



Preliminary Investigation Check List

| PP           | PI Title   | PSC                          | Customer Rep   | PM            | Investigator | Priority  | Status    | Kickoff Meeting | Close-out Meeting | PI Results  |
|--------------|--|------------------------------|--|---------------|--------------|-----------|-----------|-----------------|-------------------|---|
| PI-0115-PPSI | Methodologies for Mitigating Freight Impacts to Nearby Communities                   | Policy/Planning/ Programming | Joanne McDermott, Marilee Mortenson , Emily Mraovich                     | Patrick Tyner | CTC          | Completed | Completed | 1/29/15         | 7/14/15           | CTC plans to delivered final revised report by Friday, June 26. |
| PI-1112-PPSI | Return on Investment for Smart Growth Land Uses                                      | Policy/Planning/ Programming |  |               |              | 1         | In-queue  |                 |                   |   |
| PI-1113-PPSI | Electrification of Highways for Goods Movement                                       | Policy/Planning/ Programming |  |               |              | 2         | In-queue  |                 |                   |   |
| PI-1116-PPSI | Tribal Participation in Transportation Planning and Programming                      | Policy/Planning/ Programming | Kimberly Johnston-Dodds  |               |              | 3         | In-queue  |                 |                   |   |
| PI-0952-PPSI | Community Engagement Practices   | Policy/Planning/ Programming | Joshua Pulverman   |               |              | 4         | In-queue  |                 |                   |   |
| PI-0955-PPSI | Best Practices from State DOT's on Transportation Planning Workload Analysis         | Policy/Planning/ Programming | Nathan Smith/ Mitch Baker  |               |              | 5         | In-queue  |                 |                   |   |
| PI-0925-PPSI | Goods Movement Infrastructure and affected communities map                           | Policy/Planning/ Programming | Mike Brady/ Coco Briseno/ Bob Cervantes/ Nathan Smith/ Marilee Mortenson |               |              | 6         | In-queue  |                 |                   |   |
| PI-0913-PPSI | Reducing Uncertainty in Modeling High-Speed Emissions in California (2)              | Policy/Planning/ Programming | David Ipps   |               |              | 7         | In-queue  |                 |                   |   |
| PI-0945-PPSI | Assessing the track records of growth models and improvements for future development | Policy/Planning/ Programming | Austin Lee   |               |              | 8         | In-queue  |                 |                   |   |

## Preliminary Investigation Check List

| PP           | PI Title   | PSC                         | Customer Rep                             | PM             | Investigator       | Priority         | Status           | Kickoff Meeting | Close-out Meeting | PI Results  |
|--------------|--|-----------------------------|--|----------------|--------------------|------------------|------------------|-----------------|-------------------|---|
| PI-1115-PPSI | Modal and Long Range Plan Integration  | Policy/Planning/Programming |  |                | No longer needed   | No longer needed |                  |                 |                   |   |
| PI-0954-PPSI | Illegal Truck Parking and Roadside Safety in California (5)                                | Policy/Planning/Programming | Jeffrey Spencer                          |                |                    | No longer needed | No longer needed |                 |                   |   |
| PI-0934-PPSI | Goods Movement Data Library  | Policy/Planning/Programming | Mike Brady/ Vahid Nowshiravan/ Pam Korte | Marcus Evans   |                    | No longer needed | No longer needed |                 |                   |   |
| PIP-08-PPSI  | Transportation System Performance Measures (3)   | Policy/Planning/Programming | Coco Briseno                             | Bob Justice    |                    | No longer needed | No longer needed |                 |                   |   |
| PI-0950-PPSI | Designing Highway Facilities to Encourage Walking, Biking and Transit ("Complete Streets") | Policy/Planning/Programming | Nancy Chinlund                           |                | CTC                | Pilot            | Completed        |                 | 3/1/09            | DRI Research Project  |
| PI-1012-PPSI | California Rural-Urban Interactive Study   | Policy/Planning/Programming | Terry Parker                             |                | Student (Kathleen) | In-queue         | In-queue         | 4/30/10         |                   |   |
| PI-1113-PPSI | Seamless Bike Survey   | Policy/Planning/Programming |  |                | Student (JoJo)     | In-queue         | In-queue         | 4/30/10         |                   |   |
| PI-0214-RW   | Statewide Real Time Global Positioning System (GPS) Network Implementation                 | Right of Way/ Land Surveys  | Scott Martin                             | Robert Buendia | CTC                | Completed        | Completed        | 9/9/14          | 2/24/15           | The panel was satisfied the final report. The report was shared with other DOT's. |
| PI-13014-RW  | Large Geospatial Datasets Management   | Right of Way/ Land Surveys  | Mark Turner                              | Randy Woolley  |                    | 1                | In-queue         |                 |                   | Pending PI request  |

## Preliminary Investigation Check List

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|------------|---|-------------------------------|-------------------|---------------|--------------|---------------------|---------------------|-----------------|-------------------|--|
| PI-0917-RW | Unmanned Aerial Drones  | Right of Way/<br>Land Surveys | Mark Turner       | Randy Woolley |              | 2                   | In-queue            |                 |                   | Pending PI request   |
| PI-0216-RW | Right of Way Information Systems<br>Review of Available Tools & Cost<br>Analysis                                      | Right of Way/<br>Land Surveys | Jean-Marie Hunter | Joe Horton    | CTC          | In-progress         | In-progress         | 3/16/16         |                   |  |
| PI-0911-RW | Aerial Pavement Surveys from<br>Combined Low-Level LiDAR and<br>Digital Photogrammetry System.                        | Right of Way/<br>Land Surveys | James Appleton    | Randy Woolley | CTC          | Completed           | Completed           | 10/28/09        |                   | Customer representative did not<br>want the final report to be posted<br>on DRISI's website. |
| PI-1013-RW | Digital Archive Backup and<br>Operational Recovery System for<br>the Caltrans Aerial Photography<br>Library           | Right of Way/<br>Land Surveys | James Appleton    | Randy Woolley | CTC          | Completed           | Completed           | 10/27/09        | 5/28/10           | Satisfied with PI  |
| PI-0214-RW | Aerial Pavement Surveys Literature<br>Search  | Right of Way/<br>Land Surveys | James Appleton    | Randy Woolley | CTC          | No longer<br>needed | No longer<br>needed | 5/17/10         |                   |  |
| PI-0918-RW | Standards for Global Navigational<br>Satellite Systems  | Right of Way/<br>Land Surveys | Mark Turner       | Randy Woolley |              | No longer<br>needed | No longer<br>needed |                 |                   |  |
| PI-0907-RU | Locate, Construct, Test, and<br>Validate a California Site for a<br>USGS Digital Aerial Imagery<br>Calibration Range. | Right of Way/<br>Land Surveys | Kevin Akin        |               |              | No longer<br>needed | No longer<br>needed |                 |                   |  |

Preliminary Investigation Check List

| PP           | PI Title  | PSC                                | Customer Rep                  | PM            | Investigator | Priority  | Status    | Kickoff Meeting | Close-out Meeting | PI Results                                  |
|--------------|---|------------------------------------|-------------------------------|---------------|--------------|-----------|-----------|-----------------|-------------------|---|
| PI-1001-RU   | Improved Chain Control Operations   | Rural                              | Ian Turnbull/ Tim Fitzpatrick | Sean Campbell | CTC          | Completed | Completed | 11/18/09        | 4/6/10            | DRI Research Project                        |
| PI-1114-RU   | Effective Methods for Ensuring Accuracy of Roadway Temperature/Ice/Chemical Sensors   | Rural                              | Mike Beyer, Ian Turnbull      | Sean Campbell | CTC          | Completed | Completed | 12/15/14        |                   | CTC delivered the planned scope on 1/7/2015 |
| PI-1114-RU   | Reducing Animal-Vehicle Collisions Using Vehicle-Mounted Heat Detection               | Rural                              | Lonnie Hobbs, Ian Turnbull    | Sean Campbell |              | 1         | In-queue  |                 |                   |   |
| PI-0906-SHSP | Improving Highway Advisory Radio Transmission and Predictability                      | Rural                              | Ian Turnbull                  | Sean Campbell | CTC          | Completed | Completed | 3/14/11         | 5/18/11           | Satisfied with PI                           |
| PI-0905-SHSP | Improve Driver Decisions and Performance in High Speed, Multilane, Complex Conditions | SHSP CA-5 Transp Safety & Mobility | Wes Lum                       | Joel Retanan  | CTC          | Completed | Completed | 8/31/09         | 2/23/10           | Satisfied with PI - possible 11/12 project  |
| PI-1-CC      | Identify Pedestrian Safety Improvement Programs and Establish a Data Think Tank       | SHSP CA-8 Transp Safety & Mobility | Richard Haggstrom             | Joel Retanan  | CTC          | Completed | Completed | 7/30/09         | 2/17/10           | DRI Research Project                        |

# Preliminary Investigation Check List

| PP           | PI Title   | PSC                              | Customer Rep  | PM                  | Investigator                           | Priority  | Status    | Kickoff Meeting | Close-out Meeting | PI Results   |
|--------------|--|----------------------------------|---|---------------------|--|-----------|-----------|-----------------|-------------------|--|
| PI-2-CC      | RFP to Upgrade Roadway and Roadside Visual Image and Attribute Data Collection and Distribution  | System Performance Management    | Matt Friedman   | Asfand Siddiqui     | CTC                                    | Completed | Completed | 7/9/14          | 6/23/15           | Lee Provost completed the internal survey. Based on the findings from the PI report the panel have applied for funding from the feds to replace the photolog system. |
| PI-3-CC      | Identifying best practices for evaluation in design innovations                                  | Cross-Cutting                    | Janice Benton<br>Janice Benton, Ray Tritt, Sukhdeep Nagra, Prakash, Sah, Greg Larson Design<br>Jim Deluca, Larry Moore, Kevin Herritt | Sukhdeep Nagra      | CTC                                    | Completed | Completed | 3/26/15         |                   |  |
| PI-4-CC      | Caltrans Sustainability Goals- Methods to Quantify and Score Infrastructure Performance Measures | Cross-Cutting                    | Melissa Thompson  | Lee Provost         | CTC                                    |           |           |                 |                   |  |
| PI-0904-TS&M | Organizational Structure of Tolling Agencies   | System Performance Management    | Joe Rouse   | Hassan Aboukhadijeh | In (House) PI completed by Roya Hassas | Completed | Completed | 6/12/14         | 6/12/14           | PI submitted as background material for NCHRP research project   |
| PI-0938-TS&M | Equal Severity Curve Update  | Transportation Safety & Mobility | Alex Kennedy/ Thomas Schriber   | Joel Retanan        | CTC                                    | Completed | Completed |                 | 7/1/09            | Satisfied with PI - possible future project  |
| PI-1011-TS&M | Left Turn Flashing Yellow Arrow  | Transportation Safety & Mobility | Ted Lombardi  | Jerry Kwong         | CTC                                    | Completed | Completed | 11/19/10        | 2/23/11           | Satisfied with PI-possible 11/12 project   |

# Preliminary Investigation Check List

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|--------------|--|----------------------------------|-----------------------------|--------------|--------------|------------------|------------------|-----------------|-------------------|---|
| PI-0922-TS&M | Bicycle Sign comprehension ("Bikes In Lane" Warning Sign)  | Transportation Safety & Mobility | Dario Senor                 | Jerry Kwong  | CTC          | Completed        | Completed        | 3/11/11         | 11/15/11          | Satisfied with PI-possible research project   |
| PI-0926-TS&M | Low Speed Temporary Sand Filled Crash Cushions   | Transportation Safety & Mobility | Randy Hiatt                 | Vue Her      | DRI          | Completed        | Completed        | 10/5/10         | 12/1/10           |   |
| PI-1005-TS&M | Queue Storage and Acceleration Lane Length Design at Metered Onramps                                 | Transportation Safety & Mobility | Zhongren Wang/ Lester Lee   | Jose D Perez | CTC          | Completed        | Completed        | 1/10/12         | 3/15/12           | Satisfied with PI-research project  |
| PI-1006-TS&M | Method for Identifying and Mitigating Highway Locations with High Risks under Wet Weather Conditions | Transportation Safety & Mobility | TBD                         | Haniel Chung |              | No longer needed | No longer needed |                 |                   |   |
| PI-1007-TS&M | Implementation of Centrally Controlled Adaptive Ramp Metering System                                 | Transportation Safety & Mobility | Zhongren Wang               | Fred Yazdan  |              | No longer needed | No longer needed |                 |                   |   |
| PI-1008-TS&M | Enhanced Travel Times using historical and real-time data  | Transportation Safety & Mobility | Diana Gomez                 | Fred Yazdan  |              | No longer needed | No longer needed |                 |                   |   |
| PI-0212-TS&M | Lane-by-lane Active Traffic Management   | Transportation Safety & Mobility | Diana Gomez                 |              |              | No longer needed | No longer needed |                 |                   |   |
| PI-1009-TS&M | Traveler Information using Social Network Systems  | Transportation Safety & Mobility | Alan Bensen/ Mike Jenkinson |              |              | No longer needed | No longer needed |                 |                   |   |
| PI-0202-TS&M | Galvanizing Metal Rail Elements  | Transportation Safety & Mobility | Randy Hiatt                 | Vu Her       | CTC          | Completed        | Completed        | 6/4/12          | 11/7/12           | CTC report identify related research NCHRP Project 20-17 panel thinks the report should answer the question about the lifecycle of the two kinds of guard rail. |

## Preliminary Investigation Check List

| PP           | PI Title   | PSC                              | Customer Rep                                       | PM                      | Investigator                           | Priority    | Status      | Kickoff Meeting | Close-out Meeting | PI Results  |
|--------------|--|----------------------------------|--|-------------------------|--|-------------|-------------|-----------------|-------------------|---|
| PI-0931-TS&M | Field Operation Test on Dynamic 24-hours Traffic Responsive Ramp Metering Operations | Transportation Safety & Mobility | Zhongren Wang/ Lester Lee                          | Joel Retanan            | CTC                                    | Completed   | Completed   | 5/17/13         | 6/10/13           | We all agreed that a new research project is needed to do a before-and-after evaluation of a 24-hour traffic-responsive ramp metering.  |
| PI-0613-TS&M | Nighttime Visibility and Headlight Glare   | Transportation Safety & Mobility | Jerry Champa                                       | Nate Loebs              | CTC                                    | Completed   | Completed   | 2/27/13         | 11/5/13           | The report provided information and knowledge of what is practiced by other State DOTs. No other investigative research is needed. Will recommend creating an "Internal Subcommittee Team" from Districts rep to lead the evaluation /update on the department existing lighting policy |
| PI-0613-TS&M | Proposal to relocate freeway exit gore signs   | Transportation Safety & Mobility | Donald E. Howe                                     | Randy Woolley/Triet Bui | CTC                                    | Completed   | Completed   | 7/29/13         | 11/14/13          | 14/15 Research project done through Maintenance PSC   |
| PI-1213-TS&M | overhead sign structures without illumination  | Transportation Safety & Mobility | Donald E. Howe                                     | Randy Woolley/Triet Bui | CTC                                    | Completed   | Completed   | 11/14/13        | 10/1/14           | Panel satisfied with findings   |
| PI-0315-TS&M | Wrong-Way Driving Prevention Methods (Part 1)  | Transportation Safety & Mobility | Thomas Schriber                                    | Lai Saetern             | In (House) PI completed by Lai Saetern | Completed   | Completed   |                 |                   | Panel satisfied with findings   |
| PI-1015-TS&M | Wrong-Way Driving Prevention Methods (Part 2)  | Transportation Safety & Mobility | Jerry Champa, Mike Hagen, Deb Larson, Brian Hadley | Lai Saetern             | CTC                                    | Completed   | Completed   |                 |                   | CTC provided the final draft report 10/5/15. Waiting for feedback from panel members to finalize the report.  |
| PI-0212-TS&M | Use of the Midwest Guardrail System with 8-inch blocks and 6-inch high curb or dike  | Transportation Safety & Mobility | Randy Hiatt  | Christopher Caldwell    | In(House) PI Christopher Caldwell      | In-progress | In-progress |                 |                   |   |
| PI-1015-TS&M | Best Practices for Interagency Transportation Software Change Management             | Transportation Safety & Mobility | Stan Slavin  | Pete Gurprit            | CTC                                    | In-progress | In-progress | 3/11/16         |                   |   |

Preliminary Investigation Check List

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|--------------|---|----------------------------------|---------------------------------------|-------------|--------------|----------|----------|-----------------|-------------------|------------|
| PI-0315-TS&M | Bicycle Corrals   | Transportation Safety & Mobility | Chris Engelmann / Donald E. Howe, Sr. |             |              | 1        | In-queue |                 |                   |            |
| PI-1010-TS&M | Radar Detector for Ramp Metering Demonstration                                  | Transportation Safety & Mobility | Zhongren Wang/ Lester Lee             |             |              | 2        | In-queue |                 |                   |            |
| PI-0212-TS&M | Dynamic Speed Sign Effectiveness  | Transportation Safety & Mobility | Roberta McLaughlin                    |             |              | 3        | In-queue |                 |                   |            |
| PI-0801-TS&M | Shadow Striping   | Transportation Safety & Mobility | Haissam Yahya                         |             |              | 4        | In-queue |                 |                   |            |
| PI-0415-TS&M | Proposal to develop warranty based pavement markings                            | Transportation Safety & Mobility | Donald E. Howe, Sr                    |             |              | 5        | In-queue |                 |                   |            |
| PI-0415-TS&M | Interagency Change Mgmt of Callaborstive Open Source Software Change Management | Transportation Safety & Mobility | Stan Slavin                           |             |              | 6        | In-queue |                 |                   |            |
| PI-1015-TS&M | Developing of backup power systems for fields located ITS elements              | Transportation Safety & Mobility | Martha Styer                          | Jerry Kwong | CTC          | 7        | In-queue |                 |                   |            |
| PI-1015-TS&M | Striping Performance Contract   | Transporation Safety & Mobility  | Devinder Singh, Atifa Ferouz          | TBD         |              | 8        |          |                 |                   | new        |
| PI-1015-TS&M | Pictograph on Memorial Signs with Monument Alternatives                         | Transporation Safety & Mobility  | Donald E. Howe                        | TBD         |              | 9        |          |                 |                   | new        |
| PI-1015-TS&M | Shallow Posts for MBGR  | Transporation Safety & Mobility  | Randy Hiatt                           | TBD         |              | 10       |          |                 |                   | new        |



# Preliminary Investigation Check List

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|--------------|---|----------------------------------|------------------------------|-----|--------------|----------|-----------|-----------------|-------------------|-------------------|
| PI-1015-TS&M | End Treatment Inventory Simplification of Preapproved Products List | Transporation Safety & Mobility  | Randy Hiatt                  | TBD |              | 11       |           |                 |                   | new               |
| PI-1015-TS&M | Tapered Edge Paving   | Transportation Safety & Mobility | Chris Engelman               | TBD |              | 13       |           |                 |                   | new               |
| PI-1015-TS&M | Use of the Midwest Guardrail System                                 | Transporation Safety & Mobility  | Chris Engelmann              | TBD |              | 14       |           |                 |                   | new               |
| PI-1015-TS&M | Warranty Based Pavement Markings with Retroreflectivity             | Transporation Safety & Mobility  | Devinder Singh, Atifa Ferouz |     |              | 15       |           |                 |                   | new               |
| PI-1015-TS&M | Efficient Strategies for Underground Utilities Safely               | Transporation Safety & Mobility  | Yin Ping LI                  |     |              | 16       |           |                 |                   | new               |
| PI-0109-TS&M | Crash Reduction Factor Update                                       | Transportation Safety & Mobility | Thomas Schriber              |     | CTC          | Pilot    | Completed |                 | 1/31/09           | Satisfied with PI |